**Nurturing Process - Capstone Project1 – Part -2/3**

**Question 1:** 4Quarterly Audits are planned Q1 , Q2, Q3, Q4 for this Project What is your k­­­­­­­­­­­­­­­­­­­­­­­­­­­­­nowledge on how these Audits will happen for a BA ?

**ANS:** The purpose of these audits is to assess the progress of the project, ensure that it is on track to meet the goals and timeline, and identify any potential risks or issues that need to be addressed. Additionally, I would also participate in any discussions or meetings related to the audits, providing updates on the project's status and answering any questions the auditors may have. The auditors may also ask me to provide any recommendations for improvement or changes to the project plan based on the current progress.

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| **Stage** | **Quarter 1 - Audit Report (Requirement Gathering Phase)** |
| **Completed** | 10 Weeks |
| **Check list** | BRD template |
|   | Elicitation results report |
|   | Duplicate requirements report |
|   | Grouping of functionalities/features client-sign off |
|   | Email communication- To, CC, BCC |

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| **Stage** | **Quarter 2 - Audit Report (Requirement Analysis Phase)** |
| **Completed** | 7 Weeks  |
| **Check list** | UML diagrams |
|   | Business to functional requirements mapping |
|   | Client sign-off documents |
|   | RTM document version control |
|   | Email communication- To, CC, BCC |

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| **Stage** | **Quarter 3 - Audit Report (Design Phase)** |
| **Completed** | 7 Weeks  |
| **Check list** | Utilization of Tools |
|   | Documented evidence on client communication |
|   | Stake holder MOM |
|   | Email communication- To, CC, BCC |

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| **Stage** | **Quarter 4 - Audit Report (Development Phase)** |
| **Completed** | 20 Weeks |
| **Check list** | JAD Session report |
|   | End user manual preparation document |
|   | BA and developer MOM |
|   | Email communication- To, CC, BCC |

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| **Stage** | **Quarter 5 - Audit Report (Testing Phase)** |
| **Completed** | 20 Weeks |
| **Check list** | Test case summary |
|   | Training report to end users |
|   | Lessons learnt document |
|   | Email communication- To, CC, BCC |

**Question 2 :** Before the Project is going to kick start, The Committee asked Mr. Karthik to submit BA Approach Strategy Write BA Approach strategy (As a business analyst, what are the steps that you would need to follow to complete a project – What Elicitation Techniques to apply, how to do Stakeholder Analysis RACI/ILS, What Documents to Write, What process to follow to Sign off on the Documents, How to take Approvals from the Client, What Communication Channels to establish n implement, How to Handle Change Requests, How to update the progress of the project to the Stakeholders, How to take signoff on the UAT- Client Project Acceptance Form )

**ANS: Elicitation Techniques:**

We have many elicitation techniques to apply used to gather requirements. Some of them are : brainstorming, Document Analysis, Reverse Engineering, Focus groups, Observation, etc

**Stakeholder Analysis:** Conduct RACI (Responsible, Accountable, Consulted, Informed) or ILS (Involved, Lead, Support) analysis to determine the roles and responsibilities of each stakeholder.

\*Identify the key stakeholders and prioritize their requirements.

\*Establish effective communication channels with the stakeholders to keep them informed about the progress of the project.

**Documents:**

\*Write a Requirements Document (RD) to outline the functional and non-functional requirements of the project.

\*Create a Business Requirements Document (BRD) to provide a detailed description of the project's objectives, scope, and deliverables. Prepare a Project Charter to define the project's goals, deliverables, timeline, and budget.

\*Develop a Use Case Document to describe the processes and workflows involved in the project.

**Sign Off:** Obtain sign-off from the stakeholders on the Requirements Document, Business Requirements Document, Project Charter, and Use Case Document.

\*Ensure that the stakeholders understand and agree with the requirements, scope, and objectives of the project.

**Approvals:** Obtain the client's approval on the project deliverables, budget, timeline, and approach.

\*Ensure that the client's expectations are aligned with the project's goals and objectives.

 **Communication Channels:** Establish a regular communication schedule with the stakeholders to keep them informed about the project's progress.

\*Create a communication plan to outline the channels and methods of communication.

\*Schedule regular status meetings with the stakeholders to discuss the project's progress and address any issues or concerns.

**Change Requests:** Handle change requests in a structured and systematic manner.

\*Evaluate the impact of each change request on the project's scope, timeline, and budget.

\*Obtain approval from the stakeholders before implementing the change request.

**Progress Updates:** Keep the stakeholders informed about the project's progress through regular status reports and progress meetings. Highlight any risks or issues that need to be addressed.

\*Provide regular progress updates to the stakeholders and seek their feedback.

**UAT Sign-off:** Conduct User Acceptance Testing (UAT) to validate the project's deliverables

\*Obtain sign-off from the client on the UAT results and the Project Acceptance Form.

\*Ensure that the project meets the client's expectations and requirements.

**Question 3 :** Explain and illustrate 3-tier architecture?

**ANS:** Three-tier architecture is a software architecture that consists of three layers: presentation layer, application layer, and database layer. Here is an explanation and illustration of each layer:

**Presentation / Application Layer:** The presentation layer is the top layer of the architecture and is responsible for presenting the user interface to the end-users. This layer handles the interaction between the user and the system. **Ex:** screens, pages, validations on page, company specific logic, functionality.

**Business Logic Layer:** The application layer is the middle layer of the architecture and contains the business logic of the system. This layer manages the application logic, data validation, and data processing. **Ex:** printer, payment gateways, mail servers, RBI rules for banks.

**Database Layer:** The database layer is the bottom layer of the architecture and is responsible for managing the data storage and retrieval. This layer is responsible for storing and retrieving data. **Ex:** MY SQL, oracle database.

 **Question 4 :** Business Analyst should keep What points in his/her mind before he frames a Question to ask to the Stakeholder ( 5W 1H – SMART – RACI – 3 Tier Architecture – Use Cases, Use case Specs, Activity Diagrams, Models, Page designs)

**ANS:** Here is a summary of points a Business Analyst should keep in mind before framing questions to ask stakeholders:

1. **5W1H:** Ask questions about the Who, What, When, Where, Why, and How of the project.

2. **SMART:** Ensure that questions are Specific, Measurable, Achievable, Relevant, and Time- bound.

3. **RACI:** Understand the roles and responsibilities of all stakeholders (Responsible, Accountable, Consulted, Informed) involved in the project.

4. **3 Tier Architecture:** Understand the system architecture and how data flows between different layers of the application.

5. **Use Cases:** Develop a deep understanding of how the application will be used by various users.

6. **Use Case Specs:** Develop detailed documentation outlining specific requirements and expected behaviour for each use case.

7. **Activity Diagrams:** Create visual representations of how different activities and processes will flow within the application.

8. **Models:** Use various models to help stakeholders better understand the system, such as data models and sequence diagrams.

9. **Page designs:** Create mock-ups and wireframes of the application's user interface to better understand user needs and preferences.

**Question 5:** As a Business Analyst, What Elicitation Techniques you are aware of? (BDRFOWJIPQU)

**ANS: Brainstorming (B):** Gathering a group to generate a wide range of ideas and solutions quickly.

**Document Analysis (D):** Reviewing existing documentation to extract relevant information and understand current processes.

 **Requirements Workshops (R):** Facilitated sessions where stakeholders come together to discuss and define requirements collaboratively.

**Focus Groups (F):** Engaging a small group of stakeholders to discuss their needs and perspectives on a particular topic or product.

**Observation (O):** Watching users in their environment to understand workflows and identify needs based on their actual behaviour.

**Interviews (W):** Conducting one- on- one or small group discussions to gather in-depth information from stakeholders.

**Joint Application Development (J):** Collaborative workshops that involve stakeholders and developers to refine requirements and solutions.

**Interview (I):** Asking a fixed set of questionsto evaluate requirements and gather insights.

**Prototyping (P):** Creating preliminary versions of the application to visualize and validate requirements with users.

**Questionnaires (Q):** Distributing surveys to gather information from a longer audience, which can help identify trends and requirements.

**Use cases (U):** Defining scenarios that describe how users will interact with the system, which helps identify requirements.

**Question 6:** Which Elicitation Techniques used in this Project and Justify your selection of Elicitation Techniques? Prototyping Use case Specs Document Analysis Brainstorming?

Fertilizers, seeds, pesticides details from the manufacturers and should be able to display them to the Farmers. To gather the business requirements from the client, you went to SOONY and met Mr. Henry. When Mr. Henry was asked about the project and what are they expecting from the project, Mr. Henry stated that he is expecting to have a login for all its users (fertilizers, seeds, pesticides manufacturers and Farmers) , a product catalogue of fertilizers, seeds, pesticides, a search option to search for products, payment process, and delivery tracking. After doing the stakeholder analysis, you have found out that Peter, Kevin, Ben are the key stakeholders and you have scheduled an appointment to meet them. After meeting with them and trying to gather the stakeholder requirements, Kevin said that, a Farmer should be able to browse through the products catalogue once they visit the website and need to have a search option so that they can search for any product they need. Peter said that, if a farmer wants to buy any product or add them to buy-later list, they need to login first using their email id and password. If it is a new user, then they can create a new account by submitting their email ID and creating a secure password. Ben added saying that, Farmers needs to have an easy-to-use payment gateway, which should include cash-on-delivery (COD), Credit/Debit card and UPI options so that the user’s experience should be better. Kevin mentioned that, a user gets an email confirmation regarding their order status. A delivery tracker to track the whereabouts of their order. Identify Business Requirements (which includes Stakeholder Requirements) BR001 – Farmers should be able to search for available products in fertilizers, seeds, pesticides BR002 – Manufacturers should be able to upload and display their products in the application

**ANS: Prototyping:** The prototyping technique is used to create a working model of the application's user interface, which can be used to gather feedback from stakeholders and ensure that the requirements are being met. This technique can be particularly useful for gathering requirements related to the user interface and user experience.

**Use Case Specs:** Use case specifications is used to capture the functional requirements of the system, by defining the various use cases that the system will need to support. This technique is used to gather requirements related to the interactions between users and the system, as well as the various system functions and features.

**Document Analysis:** Document analysis is used to review existing documents such as project charters, business requirements documents, and other relevant documents to gather requirements. This technique is used to gather requirements related to existing business processes and system functionalities.

**Brainstorming:** Brainstorming is used to generate new ideas and requirements for the system by bringing together stakeholders to discuss the project. This technique is used to gather requirements related to new features or functionalities that has not yet been considered. Justification for usage of elicitation techniques:

 **Brainstorming** can be used in this project because this type of project is completely new so understanding the requirement sitting together what possible needs of the farmers and to make it a user friendly we need the client too. We can have multiple ideas coming from other side would also add helping hand to the project.

**Question 7:** Make suitable Assumptions and identify at least 10 Business Requirements.

 **ANS: Business Requirements:**

1. **BR001:** Farmers should be able to search for available products (fertilizers, seeds, pesticides) using a search function with filters such as product category, price and manufacturer.
2. **BR002:** The platform should allow manufacturers to upload and manage their product catalogue, including product details like name, price, description, and availability.
3. **BR003:** The system should support user authentication and registration, where both farmers and manufacturers can create an account with email verification and login using a secure password.
4. **BR004:** Farmers should be able to add products to a shopping cart and proceed with the check -out process, which includes updating the cart, applying discounts, reviewing orders before payment.
5. **BR005:** The system should provide multiple payment options, including Credit/ Debit card, UPI, and Cash on Delivery (COD)
6. **BR006:** The platform must have a delivery tracking system, allowing farmers to track their orders in real-time from dispatch to delivery.
7. **BR007:** Farmers should receive email notification for critical actions such as order confirmation, shipment status, payment confirmation, delivery completion.
8. **BR008:** The system should allow manufacturers to update product availability in real- time, reflecting current stock levels and preventing farmers from purchasing out –of-stock items.
9. **BR009:** The platform should ensure secure data transmission and storage, using encryption for sensitive data like payment information and personal details, complying with relevant data protection laws.
10. **BR010:** The system should provide user-friendly navigation and a responsive design, ensuring that the platform is accessible on various designs such as desktops, tablets, and smartphones.

**Question 8:** List your assumptions

**ANS: ASSUMPTIONS:**

1. The platform is a web based market place where farmers can buy fertilizers, seeds, pesticides directly from manufacturers.

2. Users need an easy- to –use interface with secure access and clear navigation.

3. The system must handle multiple forms of payments and track delivers for orders.

4. Manufacturers require a simple way to upload and manage their product catalogue.

5. The platform needs to send notifications to users regarding their order status, payment confirmations, and delivery tracking.

**Question 9:** Give Priority 1 to 10 numbers (1 being low priority – 10 being high priority) to these Requirements after discussions with the stakeholders.

**ANS:**

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| **REQ ID** | **REQ. NAME** | **REQ. DESCRIPTION** | **PRIORITY** |
| BR001 | Farmers search for product | Farmers should be able to search for available products in fertilizers, seeds, pesticides | 8 |
| BR002 | Manufacturers upload products | Manufacturers should be able to upload & display their products in the application | 8 |
| BR003 | User authentication & registration | Platform should support account creation with email verification & login for farmers & manufacturers | 9 |
| BR004 | Shopping cart ad check out | Farmers should be able to add products to shopping cart, update it, proceed with checkout | 9 |
| BR005 | Multiple payment options | The system should provide payment options like Credit/debit, COD, UPI | 10 |
| BR006 | Delivery tracking system | Farmers should be able to track their order status from dispatch to delivery | 7­­­­ |
| BR007 | Email notifications | Farmers should receive email notifications for actions like order confirmation | 7 |
| BR008 | Real- time product availability | Manufacturers should be able to update product availability in real-time to prevent farmers from purchasing out- of -stock items | 6 |
| BR009 | Secure data transmission | The platform must ensure secure data handling & encryption for sensitive information like payments, personal data  | 10 |
| BR010 | User-friendly responsive design | Platform should have responsive design, ensuring accessibility on multiple devices | 9 |

**Question 10:** Draw use case diagram

**ANS:** A **Use Case Diagram** is a visual representation of the interactions between a User (actors) and a system.



**Question 11:** Prepare use case specs for all use cases

**ANS:**

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| **USE CASE ID** | **US001** |
| Use case Name | **Login** |
| Created By | K. Jyothsna Last Updated: Jan 6th, 2025 |
| Date Created | Jan 1st 2025 Last Revision Date: Jan 15th, 2025 |
| Actor | Farmer, Manufacturer |
| Description | This use case allows user to access the system by entering their credentials. |
| Pre-Condition | The user must be registered in the system with valid login credentials |
| Post-Condition | The user is successfully logged into system and can access their account |
| Basic Flow | 1. The user selects the "Login" option.2. The system prompts the user to enter their phone number/ email ID and password.3. The user enters their credentials.4. The system verifies the credentials.5. Upon successful verification, the user is logged in and redirected to the dashboard. |
| Alternative Flow | If the credentials are incorrect, system displays an error message and asks user to re-enter their credentials.  |
| Exceptions | If the system is down or server is unavailable, user will be notified, and they will not be able to login. |
| Frequency of Use | High |
| Assumptions | The user has already created an account. |

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| **USE CASE ID** | **US002** |
| Use case Name | **New User Registration** |
| Created By | K. Jyothsna Last Updated: Jan 6th, 2025 |
| Date Created | Jan 1st 2025 Last Revision Date: Jan 15th, 2025 |
| Actor | Farmer, Manufacturer |
| Description | This use case allows a new user to create an account by providing required details such as phone number, email id. |
| Pre-Condition | The user is not yet registered in the system. |
| Post-Condition | A new user account is created, and the user can log in. |
| Basic Flow | 1. The user selects the "New User" option.2. The system prompts the user to enter their name, phone number/ email ID and password.3. The system validates the details.4. The system creates a new account for user and sends a confirmation email or SMS. |
| Alternative Flow | If the email or phone number is already in use, system informs the user and asks them to try logging in or using a different email / phone number. |
| Exceptions | If the user provided details are invalid or incomplete, system prompts user to correct the input. |
| Frequency of Use | Medium |
| Assumptions | The user has a valid email ID or phone number to register. |

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| **USE CASE ID** | **US003** |
| Use case Name | **Perform Online Purchase** |
| Created By | K. Jyothsna Last Updated: Jan 6th, 2025 |
| Date Created | Jan 1st 2025 Last Revision Date: Jan 15th, 2025 |
| Actor | Farmer |
| Description | The user can perform an online purchase by browsing, selecting, paying for products through the system. |
| Pre-Condition | The user must be logged in. Products must be available for browsing. |
| Post-Condition | The farmer successfully places an order, and system sends confirmation details. |
| Basic Flow | 1. The farmer logs into the system.2. The farmers browses available products.3. The farmer selects desired products and adds them to cart.4. The system checks product availability.5. The farmer proceeds to payment.6. The system confirms order and provides order confirmation. |
| Alternative Flow | If the product is out of stock, system informs farmer and suggests alternatives. |
| Exceptions | If there is a payment failure, system informs farmers and prompts them to retry. |
| Frequency of Use | High |
| Assumptions | Products are in stock, payment options are available. |

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| **USE CASE ID** | **US004** |
| Use case Name | **Browse Products** |
| Created By | K. Jyothsna Last Updated: Jan 6th, 2025 |
| Date Created | Jan 1st 2025 Last Revision Date: Jan 15th, 2025 |
| Actor | Farmer |
| Description | The user can browse through products listed on platform to check for availability and details before making a purchase. |
| Pre-Condition | The user must be logged in. Products must be uploaded by manufacturers. |
| Post-Condition | The farmer successfully places an order, and system sends confirmation details. |
| Basic Flow | 1. The farmer logs into the system.2. The farmer navigates to "Browse products" section.3. The system displays available products with details (price, description, availability)4. The farmer can apply filters to refine search.5. The farmer selects a product for more information or to add to cart. |
| Alternative Flow | If no products are available, system displays a message indicating that stock is empty. |
| Exceptions | If there is system error, farmer may not be able to browse products. |
| Frequency of Use | High |
| Assumptions | Products are listed and available in the system. |

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| **USE CASE ID** | **US005** |
| Use case Name | **Upload Product Details** |
| Created By | K. Jyothsna Last Updated: Jan 6th, 2025 |
| Date Created | Jan 1st 2025 Last Revision Date: Jan 15th, 2025 |
| Actor | Manufacturer |
| Description | The manufacturer can upload product details (name, price, description, availability)to system for farmers to view and purchase |
| Pre-Condition | The manufacturer must be logged in. Manufacturer has valid product details to upload. |
| Post-Condition | The product details are uploaded and visible to farmers on the platform. |
| Basic Flow | 1. The manufacturer logs into the system.2. The manufacturer navigates to "Upload product details" section.3. The system prompts manufacturer to enter product details (name, price, description, availability)4. The system validates entered details.5. Upon successful validation, product is listed in the system. |
| Alternative Flow | If the product details are incomplete or invalid, system notifies the manufacturer or correct the errors. |
| Exceptions | If the system encounters an error, product details may not be uploaded successfully. |
| Frequency of Use | Medium |
| Assumptions | The manufacturer has access to valid product information. |

**Question 12:** Activity diagrams

**ANS:** An activity diagram is a type of diagram in the Unified Modelling Language (UML) that visually represents the flow of activities within a system.

Following activity diagrams are attached form Visio tool document below.

1. **Registered Customer Login**
2. **Search Products**
3. **Add Products to Cart**
4. **Making payment**
5. **Delivery**









